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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/954,812

09/17/2001

James A. Hagan

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8204

7590

06/02/2004

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EXAMINER

OJINI, EZIAMARA ANTHONY

ART UNIT

PAPER NUMBER

3723

12

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/954,812

Applicant(s)

HAGAN ET AL.

Examiner

Anthony Ojini

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-20 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The finality of office action mailed 11/06/03 is hereby withdrawn.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuramoto (JP1005759) in view of Wang et al. (5,447,466).

With respect to claims 1,3, Kuramoto discloses a method for manufacturing a disc substrate comprising the steps of providing a glass disc substrate (2) having a circumferential edge (25), loading the disc substrate to an edge finishing apparatus; and grinding the circumferential edge of the disc substrate in a non-ductile mode.

Kuramoto fails to disclose step of coarse grinding the circumferential edge of the disc substrate in a ductile grinding regime.

Kuramoto also fails to disclose disk substrate being of a material from the set of material consisting of: glass, ceramic, and a combination of glass and ceramic.

Wang et al. disclose a method for manufacturing a disc substrate comprising the step of grinding the disc substrate in a ductile grinding regime.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Kuramoto with the step of grinding a disc

substrate in a ductile grinding regime in view of Wang et al so as to avoid residual cracks on the surface of the substrate disc.

With respect to claim 4, Kuramoto discloses a disc that contains an outer circumferential edge and a central aperture defining an inner circumferential edge, and wherein grinding step is applied to both the outer circumferential edge and inner circumferential edge of the disc (see figs.1, 2).

With respect to claim 5, Kuramoto discloses wherein the grinding step comprises grinding said edge with a formed grinding appliance conforming to an edge radius at said circumferential edge (see fig. 2).

With respect to claims 6,7, Kuramoto fails to disclose optimum values as claimed by the applicant.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Kuramoto with optimum values as claimed by the applicant **so as to avoid residual cracks on the surface of the substrate disc**, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 2, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuramoto in view of Wang et al. as applied to claim 1 above, and further in view of Bajorek (6,363,599).

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With respect to claim 2, Kuramoto disclose the glass disc is a disk drive device that is a rotating magnetic disk drive data storage device but fails to disclose it is subsequently coated with a magnetic coating after grinding step.

Bojorek discloses glass disk drive device that is a rotating magnetic disk drive data storage device that is being subsequently coated with a magnetic coating after grinding step (see col. 2, lines 18-41 & figs. 10-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Kuramoto with the step of grinding a disc substrate in a ductile grinding regime in view of Bajorek so as to prevent damage on the surface of the substrate disc.

***Allowable Subject Matter***

Claims 10-20 are allowed over prior art.

Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the art of record considered as whole, alone or in combination, neither anticipates nor renders obvious the manufacturing a disk substrate wherein the disk substrate is a material which is not chemically strengthenable.

***Response to Amendment***

**Applicant's** arguments filed 04/06/04 have been fully considered but they are not persuasive.

**Applicant argues** that in Japan Patent No. JP1005759 to Kuramoto and U.S. Patent No. 5,447,466 to Wang et al., "there is no suggestion in the art to combine the references in such a manner as to teach or suggest finishing the edges of data recording disks in a ductile grinding regime, a basis for all rejections herein". However, Wang et al. disclose the concept of grinding a disc substrate in a ductile grinding regime. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Kuramoto with the step of grinding a disc substrate in a ductile grinding regime in view of Wang et al. so as to avoid residual cracks on the surface of the substrate disc.

**Applicant argues** that in U.S. Patent No. 5,447,466 to Wang et al., "is directed to a chemically-assisted machining process for ceramic materials, in which ceramics are machined in the presence of certain halogenated hydrocarbons as accelerants. This process is manifestly not a ductile grinding process, nor is there anything in Wang which suggests particular application to data recording disks". However, Wang et al. teach the concept of ductile grinding so as to avoid residual cracks on the surface of the substrate disc in column 1, lines 32-41.

**Applicant argues** that the U.S. Patent No. 6,363,599 B1 to Bajorek "contains no teaching or suggestion of a ductile grinding step". However, Bajorek discloses the

concept of a glass substrate that is finished for installation in a disk drive data storage device.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7 to 4 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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AO  
May 19, 2004